WHAT IS CLAIMED IS:

1. An optical recording method for recording a hologram, wherein a recording spot is formed by intersecting reference light with signal light in which at least one of amplitude, a phase, and a polarization state has been spatially modulated according to information and a Fourier transform has been carried out with a lens system, the recording spot is scanned, and the hologram is recorded in a recording layer in an optical recording medium, the method comprising:

forming the recording spot by selectively using zero-order to low-order diffracted light components of a Fourier transform image of the signal light;

setting a width of a plurality of recording tracks, which are arranged in a direction crossed at right angles with a scanning direction of the recording spot in the recording layer, according to the order of the diffracted light component so as to be at least larger than a spread of the Fourier transform image corresponding to a maximum spatial frequency of the signal light; and

scanning the recording spot along the recording track.

2. An optical recording method according to claim 1, wherein a width w of the recording track satisfies a relationship expressed by the following equation:

$$\frac{\lambda F}{d} \leq w \leq \frac{n\lambda F}{d}$$

wherein d is a length of one side of one-bit data in the signal light, λ is a wavelength of the signal light, F is a focal distance of the lens system, and n is an integer of 2, 3, or 4.

3. An optical recording method according to claim 1, wherein a width w of the recording track satisfies a relationship expressed by the following equation:

$$w \approx m\frac{\lambda F}{d}$$

wherein d is a length of one side of one-bit data in the signal light, λ is a wavelength of the signal light, F is a focal distance of the lens system, and n is an integer of 1, 2, 3, or 4.

4. An optical recording method according to claim 1, wherein a width w of the recording track satisfies a relationship expressed by the following equation in the case where, in the optical recording medium, a surface on a lens side of the recording layer is arranged forward by y from a focal position of the lens system:

$$w \approx m\left(\frac{\lambda F}{d} + \left|\frac{1}{2F} - \frac{\lambda}{d}\right| y\right)$$

wherein d is a length of one side of one-bit data in the signal light, λ is a wavelength of the signal light, F is a focal distance of the lens system, y is a distance between the focal point of the lens system and the surface on the lens side of the recording layer, l is a size, of image data before Fourier transform of the signal light, corresponding to the direction crossed at right angles with the scanning direction, and m is an integer of 1, 2, 3, or 4.

5. An optical recording method for recording a hologram in a recording layer of an optical recording medium having a recording track, the method comprising:

generating signal light in which at least one of amplitude, a phase, and a polarization state is spatially modulated according to information;

carrying out a Fourier transform to the signal light;

forming a recording spot in such a manner that the signal light and reference light intersect and diffracted light components, of the signal light, having a plurality of orders including a zero-order in a Fourier transform image are selectively used;

setting a width of the recording track according to the order of the diffracted light component so as to be at least larger than a spread of the Fourier transform image corresponding to a maximum spatial frequency of the signal

light; and

scanning the recording spot along the recording track.

6. An optical recording method according to claim 5, wherein a plurality of the recording tracks are arranged in a direction crossed at right angles with a scanning direction of the recording spot in the recording layer.

7. An optical recording method according to claim 5, wherein the Fourier transform is applied to the signal light by using a lens system.

8. An optical recording method according to claim 5, wherein the reference light is a spherical reference wave and a hologram is multiply recorded by shift multiplexing.

9. An optical recording medium which is used for an optical recording method including the steps of modulating spatially at least one of amplitude, a phase, and a polarization state of signal light according to information, carrying out a Fourier transform with a lens system, forming a recording spot by intersecting the signal light with a reference light to selectively use diffracted light components, of the signal light, having a plurality of orders in a Fourier transform image, scanning the recording spot, and recording a hologram in a

recording layer of the optical recording medium, wherein

a plurality of recording tracks are arranged in a direction crossed at right angles with a scanning direction of the recording spot in the recording layer; and

widths of the recording tracks are set according to the order of the diffracted light component so as to be at least larger than a spread of the Fourier transform image corresponding to a maximum spatial frequency of the signal light.

10. An optical recording medium according to claim 9, wherein the orders of the diffracted light components in the Fourier transform image are one of zero-order and primary, zero-order through secondary, zero-order through tertiary, or zero-order through quaternary.

11. An optical recording medium according to claim 9, wherein a width w of the recording track satisfies a relationship expressed by the following equation;

$$\frac{\lambda F}{d} \leq w \leq \frac{n\lambda F}{d}$$

wherein d is a length of one side of one-bit data in the signal light, λ is a wavelength of the signal light, F is a focal distance of the lens system, and n is an integer of 2, 3, or 4.

12. An optical recording medium according to claim 9, wherein a width w of the recording track satisfies a relationship expressed by the following equation:

$$w \approx m\frac{\lambda F}{d}$$

wherein d is a length of one side of one-bit data in the signal light, λ is a wavelength of the signal light, F is a focal distance of the lens system, and m is an integer of 1, 2, 3, or 4.

13. An optical recording medium according to claim 9, wherein a width w of the recording track satisfies a relationship expressed by the following equation in the case where, in the optical recording medium, a surface on a lens side of the recording layer is arranged forward by y from a focal position of the lens system:

$$w \approx m\left(\frac{\lambda F}{d} + \left|\frac{l}{2F} - \frac{\lambda}{d}\right| y\right)$$

wherein d is a length of one side of one-bit data in the signal light, λ is a wavelength of the signal light, F is a focal distance of the lens system, y is a distance between the focal point of the lens system and the surface on the lens side of the recording layer, l is a size, of image data before a Fourier transform of the signal light, corresponding to the direction

crossed at right angles with the scanning direction, and m is an integer of 1, 2, 3, or 4.

14. An optical recording medium according to claim 9, wherein the plurality of recording tracks are arranged adjacent to each other and separated by a region where at least one of optical transmittance, reflectivity, and optical anisotropy is different from that of the recording track region.

15. An optical recording medium according to claim 9, wherein the plurality of recording tracks are provided in the form of concentric circles.

16. An optical recording medium according to claim 9, wherein the plurality of recording tracks are provided in the form of a spiral.

17. An optical recording medium according to claim 9, wherein the optical recording medium is substantially in the form of a disk.

18. An optical recording medium according to claim 9, wherein the optical recording medium is substantially in the form of a card.